

Addendum E-1

24X National Exchange User Manual

24X NATIONAL EXCHANGE LLC

USER MANUAL

Introduction

The 24X National Exchange (the "**Exchange**") created this User Manual to assist Members¹ and Users of its Exchange in understanding the operation of the Exchange. The User Manual discusses and summarizes various Exchange Rules. In the event of a conflict between the User Manual and the Rules set forth in the Exchange Rulebook, the Rules will prevail.

The Exchange is the first fully electronic national securities exchange in the United States that allows trading of securities pursuant to unlisted trading privileges ("**UTP**") 23 hours per day 5 days per week (in accordance with the definitions of Pre-Market Session, Core Market Session, Post-Market Session and 24X Market Session as set forth in Rule 1.5, and subject to the trading pauses as described in 24X Rules). The Exchange operates a fully automated electronic equities trading platform for the purpose of buying and selling securities with a continuous, automated matching function with a price/time execution model and a maker/taker fee structure.

Trading System

The Exchange is a fully automated electronic limit order book for orders to buy and sell National Market System ("**NMS**") stocks with a continuous matching function. The Exchange also offers routing functionality through a third-party routing service(s) with connectivity to all Trading Centers (as defined in Regulation NMS of the Securities Exchange Act of 1934 ("**Exchange Act**")) displaying "Protected Quotations," as defined by Regulation NMS. Members of the Exchange and their Sponsored Participants connect to the System via FIX and/or binary order entry protocols to electronically send orders to buy and sell securities traded on the Exchange.

The Exchange utilizes trading technology and systems (collectively the "**System**") that were developed by MEMX Technologies LLC ("**MEMX**"), a subsidiary of MEMX Holdings LLC, and provided to the Exchange pursuant to a Delivery, Licenses and Services Agreement (the "**Agreement**") between MEMX and the Exchange. Although components of the System are operated by MEMX on the Exchange's behalf, the System is operated independently of MEMX and is a facility of the Exchange.

The Exchange was built with a focus on performance, reliability and security. The Exchange's trading system (the "**System**") is distributed across a network of servers to maximize throughput, minimize latency and bottlenecks, provide high availability and fault tolerance, and allow for simplified scalability.

The System operates on the basis of price/time priority. This means that orders are executed based on best price, and if multiple orders are at the same price, an order with an earlier timestamp has first priority. The matching engine compares the limit price of an incoming order with the price of resting (i.e., booked) limit or pegged orders on the Exchange's order book (the "**24X Book**") and the price of other markets' displayed quotes. If the order is immediately marketable against the 24X Book at a price equal to or better than the NBBO, an immediate match is made and communicated back to the Users. If another market is displaying a better quote, the order will be handled based on the User's instructions: routed to the other market to attempt to fill the order, posted to the 24X Book or canceled.

Users or their clearing firms may request drop copies of their executions via standard FIX drop ports that send trade information and include execution reports and trade cancel/correct messages.

Data Centers and Co-Location

The primary trading platform for the Exchange is located in the Equinix data center services in New Jersey

¹ Any term that is capitalized herein but not otherwise defined has the meaning set forth for such term in the Rulebook of the Exchange (the "**Rules**" or the "**Rulebook**").

(NY4), and a secondary back-up data center is located in Chicago, Illinois (CH4). The System is accessible to Members, Sponsored Participants, Service Bureaus, Data Recipients (collectively "**Access Persons**") and Extranet Providers.

The Exchange offers co-location services in both the NY4 and CH4 data centers. This provides participants with the fairest and fastest access to Exchange services, reduced network complexity, and flexible power and connectivity options. Access Persons will be able to connect to order entry systems and receive market data in both the NY4 and CH4 data centers. The Exchange offers redundant physical network connectivity in both data centers. This set of network connections, the "A" and "B" feeds, provide high availability and fault tolerance to all co-located participants.

The Equinix data centers are Tier 3 compliant and provide a high level of security and availability through redundant and reliable environmental control systems (redundant power supplies, on-site backup generators, cooling systems, etc.). Data center personnel are available 24/5 to maintain and service the System.

Connectivity and Access

The Exchange supports the following connectivity methods in its data centers:

- Co-Location Cross-Connect: Access Persons may request a cross-connect from the Access Person's point-of-presence to the Exchange.
- Extranet Providers: Access Persons may connect to the Exchange via an approved Extranet Provider.
- Private-Line Ethernet: Access Persons may connect via telecommunications carriers providing a circuit extension from a location outside the Exchange's primary data center.

Users are permitted to electronically access the order entry facilities of the Exchange using FIX and binary protocols, with a common schema used for both. Message framing and encoding is also standardized and unified across protocols.

Risk Controls

The order entry facilities contain an integrated pre-trade risk management service that processes all incoming order information against a mandatory set of risk controls designed to help prevent erroneous orders from passing through to the matching engine for execution. These controls are dynamically configurable by Clearing Firms and other Members, Sponsored Participants and Service Bureaus and can be assigned to an individual session. These controls include:

- (a) controls related to the size of an order (including restrictions on the maximum notional value per order and maximum shares per order);
- (b) controls related to the price of an order (including percentage-based and dollar-based controls);
- (c) controls related to the order types or modifiers that can be utilized (including Pre-Market Session, Post-Market Session, 24X Market Session, short sales and ISOs);
- (d) controls to restrict the types of securities transacted (including restricted securities and easy to borrow securities as well as restricting activity to test symbols only);
- (e) controls to prohibit duplicative orders;
- (f) controls to restrict the overall rate of orders; and
- (g) controls related to the size of an order as compared to the average daily volume of the security (including the ability to specify the minimum average daily volume of the securities for which such controls will be activated).

The Exchange supports the canceling of an order via any active User session regardless of the session on which the original order was transmitted. Additionally, this flexibility allows the Exchange to offer a bulk cancel function, via any active session, which can be used by a User to cancel all or a subset of its orders in one or more symbols with a single command to the Exchange.

Limit Order Price Protection: As described further in Rule 11.9(g), a Limit Order to buy (sell) will be rejected if it is priced at or above (below) the greater of \$0.15 or a specified percentage away from the following: (i) the NBO for Limit Orders to buy, the NBB for Limit Orders to sell; (ii) if (i) is unavailable, the latest available of the consolidated last sale price disseminated during the Post-Market Session on trade date or the consolidated last sale price disseminated during Regular Trading Hours on trade date; or (iii) if neither (i) or (ii) are available, the prior day's official closing price identified as such by the primary listing exchange, adjusted to account for events such as corporate actions and news events. The specified percentage is set forth in the table below.

Reference Price	Specified Percentage for Core Market Session	Specified Percentage for Pre-Market, Post-Market Session and 24X Market Session
Greater than \$0.00 up to and including \$25.00	10%	20%
Greater than \$25.00 up to and including \$50.00	5%	10%
Greater than \$50.00	3%	6%

Price Tick Size Check: All orders and order modification requests will be checked against the permissible price increments in the security upon entry into the System: The pricing increment of \$0.01 for those bids, offers, or orders that are priced equal to or greater than \$1.00 per share; or the pricing increment of \$0.0001 if those bids, offers, or orders are priced less than \$1.00 per share.

Hours of Trading and Market Sessions:

Session Start and End Time (all times are Eastern Time)

- 24X Market Session
- (i) 8:00 p.m. ET on Sunday to 4:00 a.m. ET on Monday, unless Monday is not a U.S. Business Day;
 - (ii) 8:00 p.m. ET on Monday to 4:00 a.m. ET on Tuesday, unless Tuesday is not a U.S. Business Day;
 - (iii) 8:00 p.m. ET on Tuesday to 4:00 a.m. ET on Wednesday, unless Wednesday is not a U.S. Business Day;
 - (iv) 8:00 p.m. ET on Wednesday to 4:00 a.m. ET on Thursday, unless Thursday is not a U.S. Business Day;
 - (v) 8:00 p.m. ET on Thursday to 4:00 a.m. ET on Friday, unless Friday is not a U.S. Business Day.

For example, for Labor Day, which falls on a Monday and is not a U.S. Business Day, there will be no trading from 8:00 p.m. ET on Sunday (the day before Labor Day) to 4:00 a.m. ET on Monday (Labor Day). However, there will be trading from 8:00 p.m. ET on Monday (Labor Day) to 4:00 a.m. ET on Tuesday (the day after Labor Day).

As for another example, suppose that the Fourth of July, which is not a U.S. Business Day, falls on a Wednesday. There will be no trading from 8:00 p.m. ET on Tuesday (the day before the Fourth of July) to 4:00 a.m. ET on Wednesday (the Fourth of July). However, there will be trading from 8:00 p.m. ET on Wednesday (the Fourth of July) to 4:00 a.m. ET on Thursday (the day after the Fourth of July).

Note that, notwithstanding anything to the contrary in the Rules, the Exchange shall not commence operation of the 24X Market Session unless (1) the Equity Data Plans have established a mechanism to collect, consolidate, process and disseminate quotation and transaction information at all times during the 24X Market Session that is equivalent to the mechanism established for Exchange Trading Hours other than the 24X Market Session, (2) the Equity Data Plans have provided the Exchange with notification that they are prepared to collect, consolidate, process and disseminate quotation and transaction information to accommodate the 24X Market Session, and (3) the Exchange has filed a proposed rule change in accordance with Rule 1.5(c) that has been approved by the SEC or otherwise has become effective.

Pre-Market Session: 4:00 a.m. to 9:30 a.m. ET each U.S. Business Day

Core Market Session: 9:30 a.m. to 4:00 p.m. ET each U.S. Business Day

Post-Market Session: 4:00 p.m. to 7:00 p.m. ET each U.S. Business Day (end of day)

The Exchange will pause trading each Monday, Tuesday, Wednesday and Thursday between 7:00 p.m. ET and 8:00 p.m. ET. Orders outstanding in the System at 6:59:59 p.m. on Monday, Tuesday, Wednesday, Thursday and Friday are automatically cancelled.

The Exchange also will pause trading during the 24X Market Session for material corporate actions and at such other times as the Exchange may determine is necessary for technological or other purposes. In each case, the Exchange will provide advance notice of such trading pauses.

Any orders submitted to the Exchange that have been cancelled for any reason must be resubmitted by the Member to the Exchange to be traded after such cancellation.

Order Types and Modifiers

The Exchange generally accepts the following order types:

- Market Orders
- Limit Orders
- Pegged Orders (including Midpoint Peg and Primary Peg with or without Offsets)

However, market orders may only be submitted during the Core Market Session, not the Pre-Market Session, Post-Market Session or 24X Market Session, and pegged orders may not be submitted during the 24X Market Session. Orders may be submitted in round lots, mixed lots, or odd lots.

Order type modifiers:

- Intermarket Sweep Orders (ISOs)
- Reserve Quantity
- Non-Displayed
- Minimum Execution Quantity
- Post Only
- Book Only

- Self-Trade Prevention ("STP")

Time-in-Force ("TIF") instructions available

- Regular Hours Only ("RHO"): Order designated for execution only during the Core Market Session.
- Immediate-Or-Cancel (IOC): An instruction the User may attach to an order stating the order is to be executed in whole or in part as soon as such order is received.
- Fill-Or-Kill (FOK): An IOC order where the entire size must be filled.
- Extended Hours (Day+): Available for execution in all trading sessions during one 24X Trading Day, starting at 8:00 p.m. on one calendar day and, if not executed, expires by 7:00 p.m. on the next calendar day
- Good-'til Time ("GTT"): An instruction the User may attach to an order specifying the time of day at which the order expires. Any unexecuted portion of an order with a TIF instruction of GTT will be cancelled at the expiration of the User's specified time, which can be no later than the close of the Post-Market Session.

Order Types and Modifiers definitions:

- Market Orders: An order to buy or sell a stated quantity of a security that is to be executed at or better than the NBBO at the time the order reaches the 24X Book. Market orders are never displayable. Market orders do not trade through Protected Quotations, and any unexecuted portion of a market order (other than a routable market order, described below) will be canceled if all liquidity on the Exchange at or better than the best priced Protected Quotation is exhausted.
 - The Exchange accepts market orders designated as routable. Any portion of a routable market order that cannot be executed on the Exchange at or better than the best priced Protected Quotation will be eligible for routing to away trading centers. A routable market order will trade at increasingly aggressive prices, fully satisfying all Protected Quotations, until the order is fully filled or reaches the limit up-limit down (LULD) price band.
- Limit Orders: An order to buy or sell a stated quantity of a security at a specified price or better. For buy limit orders, the order will be executed only at the limit price or a lower, while for sell limit orders, the order will be executed only at the limit price or a higher. Limit orders may be designated as routable or as Intermarket Sweep Order (ISO).
- Pegged Orders: A Pegged Order to buy (sell) with a displayed price that is pegged to the NBBO. A Pegged Order to buy (sell) will be rejected on arrival, or cancelled when resting, if there is no NBBO against which to peg. A Pegged Order may include an offset value up to two decimals. Pegged orders are only supported during the Pre-Market Session, the Core Market Session, and the Post-Market Session.
- Midpoint Peg: A Limit Order that is not displayed and does not route, with a working price at the midpoint of the NBBO. Mid-Point Orders are only supported during the Pre-Market Session, the Core Market Session, and the Post-Market Session. Mid-Point Orders may be designated with a "minimum trade size". A minimum order size of one round lot will be allowed.
- Primary Peg with Offsets: A Pegged Order to buy (sell) with a displayed price that is pegged to the NBBO with a non-displayed price that is a positive (buy) or negative (sell) offset. Pegged orders are only supported during the Pre-Market Session, the Core Market Session, and the Post-Market Session.

Members may use the following modifiers:

- Intermarket Sweep Orders (ISO): A Limit Order that does not route and meets the requirements of Rule 600(b)(38) of Regulation NMS.

- IOC-Immediate or Cancel - An ISO designated IOC will be immediately executed against contra-side interest in the 24X Book up to its full size and limit price and the quantity. The balance of the unfilled quantity not executed on the Exchange or another Trading Center (pursuant to Rule 11.10) will be cancelled back to the Member.
- RHO or Day+ ISO - An ISO designated RHO or Day+, if marketable on arrival, will be immediately executed against contra-side interest in the 24X Book up to its full size and limit price. Any untraded quantity of a RHO or Day+ ISO will be displayed at its limit price and may lock or cross a protected quotation that was displayed at the time of arrival.
- Reserve Quantity: A Limit Order with a quantity of the size displayed and with a reserve quantity of the size ("**reserve quantity**") that is not displayed. Both the display quantity and the reserve quantity of an arriving marketable Reserve Order are eligible to trade with resting interest in the 24X Book or route to away Trading Centers.

The display quantity of a Reserve Order must be entered in round lots. The displayed portion of a Reserve Order will be replenished following any execution. Each time a Reserve Order is replenished from reserve quantity, a new working time is assigned to the replenished quantity of the Reserve Order.

Random Replenishment and Fixed Replenishment options are supported.

- Non-Displayed: Orders are not to be displayed by the System on the 24X Book. All incoming order flow can interact with non-displayed orders until the non-displayed size is exhausted at the specified price.
- Minimum Execution Quantity: Minimum Quantity (Min.Qty.) functionality allows users to request a minimum share amount on each execution. Orders with Minimum Quantity instructions will always be with non-displayed orders and orders with such instructions are not eligible for routing.
- Post Only: A Post Only ("PO") is an order that is rejected if it is marketable against the NBBO on arrival. A PO Order is eligible to interact solely with interest on the Exchange, will not route, and will cancel if it locks or crosses the NBBO.
- Book Only: An order instruction stating that an order will be matched against an order on the 24X Book or posted to the 24X Book but will not route to an away trading center.
- Re-Price Instruction: Instructs the Exchange to reprice an order that would otherwise violate the Rule 611 Reg NMS order protection rule, would lock or cross the NBBO, not comply with Reg SHO Rule 201 when an order marked short is priced at the NBB during a SSCB ("Short Sale Circuit Breaker"), or not comply with LULD where buy (sell) interest would be above (below) the upper (lower) price band.
- STP Modifier: Any incoming order to buy (sell) designated with an STP modifier will be prevented from trading with a resting order to sell (buy) from the same 24X member ID. The STP modifier on the incoming order controls the interaction between two orders marked with STP modifiers. The STP modifier may instruct the System to take one of the following actions:
 - Cancel Newest order ("CN")
 - Cancel Oldest order ("CO")
 - Decrement and Cancel ("DC")
 - Cancel Both orders ("CB")

- Cancel Smallest ("CS")

Orders will be accepted for any such security, whether submitted by a Member on a proprietary or agency basis, in any size limited to a maximum of 1,000,000 shares or \$30,000,000.00, whichever is higher. Orders may be submitted in round lots, mixed lots, or odd lots.

Orders Permitted in Each Session

Pre-Market Session. Unless otherwise specified, all orders and modifiers that are designated for the Pre-Market Session, **except** for market orders, are eligible to participate in the Pre-Market Session.

Core Market Session. Unless otherwise specified, all orders and modifiers that are designated for the Core Market Session are eligible to participate in the Core Market Session.

Post-Market Session. Unless otherwise specified, all orders and modifiers that are designated for the Post-Market Session, **except** for market orders, are eligible to participate in the Post-Market Session.

24X Market Session. Unless otherwise specified, all orders that are designated for the 24X Market Session, **except** for market orders and pegged orders, are eligible to participate in the 24X Market Session.

Appendix I contains an overview of the order types and modifiers that can be placed during the Pre-Market Session, Core Market Session, Post-Market Session and the 24X Market Session.

As set forth in Rule 3.21, Extended Hours Trading involves material trading risks, including the possibility of lower liquidity, high volatility, changing prices, unlinked markets, an exaggerated effect from news announcements, wider spreads and any other relevant risk. Rule 3.21 also describes additional potential trading risks that may be present during the 24X Market Session.

Order Entry Price and Size Increments

The minimum price increment for quotations and orders in equity securities (1) priced \$1.00 or above is \$0.01; (2) priced below \$1.00 is \$0.0001; or (3) is any other increment established by the SEC for any security which has been granted an exemption from the minimum price increments requirements of SEC Rule 612(a) or 612(b) of Regulation NMS. The price increment for orders for securities traded on the Exchange will be determined from time to time by the Exchange, consistent with any SEC rules or regulations adopted in this regard.

The minimum unit of trading in stocks is one share. 100 shares constitute a "round lot," unless specified by the primary listing market to be fewer than 100 shares. Any amount less than a round lot shall constitute an "odd lot," and any amount greater than a round lot that is not a multiple of a round lot shall constitute a "mixed lot".

Commencement of Trading in Each Session

For the commencement of trading for each trading session, orders will be handled in accordance with price/time priority, and will be placed on the 24X Book, routed, cancelled, or executed in accordance with the terms of the order. No opening auctions will occur. Subject to any trading pauses, halts or suspensions, the requirements of specific order types, and other applicable requirements, as described in the Rules, trading will be continuous during the 24X Trading Day, despite the designation of specified times for the Pre-Market Session, Core Market Session, Post-Market Session and 24X Market Session.

For RHO orders designated for the Core Market Session, trading will commence once the security has begun trading on the primary listing market on or after 9:30:00 am Eastern Time.

Priority of Orders

Orders are ranked and maintained in the 24X Book based on the price/time priority as follows:

- Price. The highest-priced order to buy (lowest-priced order to sell) has priority over all other orders to buy (sell) in all cases.
- Time. The following priority rules apply:
 - A. Except as provided in (B) and (C) below, the System ranks equally priced trading interest within the System in time priority in the following order:
 1. The portion of a Limit Order with a Displayed instruction;
 2. Limit Orders with a Non-Displayed instruction;
 3. Primary Pegged Orders;
 4. Midpoint Pegged Orders; and
 5. Reserve Quantity of Limit Orders.
 - B. At the Midpoint of the NBBO. The System ranks trading interest priced at the midpoint of the NBBO within the System in time priority in the following order:
 1. Limit Orders to which the Display-Price Sliding instruction has been applied;
 2. Limit Orders with a Non-Displayed instruction;
 3. Primary Pegged Orders;
 4. Midpoint Pegged Orders; and
 5. Reserve Quantity of Limit Orders.
 - C. Where buy (sell) orders are using instructions that cause them to be re-ranked by the System upon clearance of a Locking Quotation, the System re-ranks and displays such orders at the Locking Price in time priority in the following order:
 1. Limit Orders to which the ISO instruction has been applied that also contain a TIF instruction of RHO when such orders establish a new NBBO at the Locked Price; and
 2. Limit Orders with the Display-Price Sliding instruction.
 - D. For purposes of (A) and (B) above, orders re-ranked subject to the Re-Pricing instruction to comply with Rule 201 of Regulation SHO maintain the same priority as Limit Orders at that price.

Size Modification

In the event that the size of an order has been modified, such order retains priority if such modification involves a decrease in the size of the order. In the event that the size of the order has been increased and/or the price has been changed, the order will be treated as a new order and will receive a new time priority.

Display

The System will display to Users and other market participants all non-marketable, displayed Limit Orders in the 24X Book.

Quote Dissemination

The best-ranked displayed order(s) to buy and the best ranked displayed order(s) to sell in the 24X Book and the aggregate displayed size of such orders associated with such prices shall be collected and made available to quotation vendors for dissemination pursuant to the requirements of SEC Rule 602 of Regulation NMS under the Exchange Act, subject to any applicable exemptions or exceptions.

If non-marketable odd-lot sized orders can be aggregated to equal at least a round lot, such odd-lot sized orders will be displayed as the best ranked displayed orders to sell (buy) at the least aggressive price at which such odd-lot sized orders can be aggregated to equal at least a round lot.

A new quote will be published only if it is different from the last-published quote.

Routing to Away Markets

The Exchange may automatically route orders to other Trading Centers under certain circumstances via one or more routing brokers that are not affiliated with the Exchange. A proprietary process is used to determine the System routing table, which determines the order in which the System routes orders to specific Trading Centers. A combination of direct exchange feeds and CQS/UQDF data feeds from the Securities Information Processors are used for the handling, execution and routing of orders.

Orders that have been routed to other Trading Centers are not ranked and maintained in the 24X Book. If a routed order is subsequently returned, in whole or in part, that order, or its remainder, will receive a new timestamp reflecting the time of its return to the System.

Orders can be routed away from the Exchange during the Pre-Market Session, Core Market Session and Post-Market Sessions. In addition, to the extent that other Trading Centers are open during the 24X Market Session, then orders may be routed away to such Trading Centers during the 24X Market Session.

Users have the option to use the Routing Services of routing broker(s) that are not affiliated with the Exchange to route orders to markets other than the Exchange after orders are cancelled on the Exchange.

Regulation SHO Plan (Reg SHO)

An order that includes a Short Sale instruction when a Short Sale Circuit Breaker pursuant to Rule 201 of Regulation SHO is in effect is not eligible for routing by the Exchange. If an order is ineligible for routing due to a Short Sale Circuit Breaker being in effect and such order is a Market Order or contains a Time in-Force of IOC, then the order will be cancelled. For any other order ineligible for routing due to a Short Sale Circuit Breaker being in effect, the Exchange will post the unfilled balance of the order to the 24X Book and subject it to the Re-Pricing Instructions to Comply with Rule 201 of Regulation SHO, as described in Rule 11.6(j)(2), unless the User has elected the order Cancel Back as described in Rule 11.6(a).

Once a Short Sale Circuit Breaker pursuant to Rule 201 of Regulation SHO has been triggered during regular trading hours, the price test restriction of Rule 201 will be in place for the applicable covered security for the remainder of the trading day on which the Short Sale Circuit Breaker is triggered, through the next U.S. Business Day after the trading day on which the Short Sale Circuit Breaker is triggered, and until 4 a.m. on the U.S. Business Day after the next U.S. Business Day after the trading day on which the Short Sale Circuit Breaker is triggered, unless the listing market for the covered security provides a notification via the Securities Information Processor feeds indicating that the price test restriction is no longer in effect at a time earlier than 4 a.m. on the U.S. Business Day after the next U.S. Business Day after the trading day on which the Short Sale Circuit Breaker is triggered. For example:

- If the Short Sale Circuit Breaker is triggered on Tuesday at noon, the price restrictions would remain in place for the remainder of Tuesday, Wednesday, and until 4 a.m. on Thursday (unless the primary listing market provides a notification that the price restriction is no longer in effect earlier than 4 a.m. on Thursday);
- If the Short Sale Circuit Breaker is triggered on Friday at noon, the price restrictions would remain in place for the remainder of Friday, Saturday, Sunday, Monday and until 4 a.m. on Tuesday (unless the primary listing market provides a notification that the price restriction is no longer in effect earlier than 4 a.m. on Tuesday).

Data Feeds

The Exchange uses the following data feeds for the handling, routing and execution of orders, as well as for surveillance necessary to monitor compliance with applicable securities laws and Exchange rules.

<u>Market Center</u>	<u>Primary Source</u>	<u>Secondary Source</u>
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Choe BYX	CQS/UQDF	n/a
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Cboe BZX	Direct Feed	CQS/UQDF
Cboe EDGA	CQS/UQDF	n/a
Cboe EDGX	Direct Feed	CQS/UQDF
FINRA ADF	CQS/UQDF-	n/a
IEX	Direct Feed	CQS/UQDF
Nasdaq	Direct Feed	CQS/UQDF
Nasdaq PSX	CQS/UQDF	n/a
Nasdaq BX	CQS/UQDF-	n/a
NYSE	Direct Feed	CQS/UQDF
NYSE American	CQS/UQDF	n/a
NYSE Arca	Direct Feed	CQS/UQDF
NYSE Chicago	CQS/UQDF	n/a
NYSE National	CQS/UQDF	n/a
LTSE	CQS/UQDF-	n/a
MEMX	Direct Feed	CQS/UQDF
MIAX	Direct Feed	CQS/UQDF

Market Data Products

The Exchange offers several data products:

- (a) 24X Depth. 24X Depth is a data feed that contains all displayed orders for securities trading on the Exchange, order executions, order cancellations, order modifications, order identification numbers, and administrative messages.
- (b) 24X Top. 24X Top is an uncompressed data feed that offers top of book quotations based on equity orders entered into the System.
- (c) 24X Last Sale. 24X Last Sale is an uncompressed data feed that offers only execution information based on equity orders entered into the System.
- (d) 24X Historical Data. 24X Historical Data is a data product that offers historical equities data.

The Exchange's real-time market data is electronically available directly from the Exchange through the use of APIs defined in the specifications or via market data vendors.

Trading Halts and Re-Opening Process

The System will automatically halt trading when trading in an NMS security is halted, suspended or paused on the security's primary listing exchange. All live orders in the halted, suspended or paused security will be cancelled from the 24X Book.

Re-Opening After a Halt

While an equity security is subject to a halt, suspension, or pause in trading, the Exchange **will not accept** orders for queuing prior to the resumption of trading in the security on the primary listing exchange.

Limit Up-Limit Down (LULD) Functionality

To address extraordinary market volatility in individual securities, the securities markets have implemented a Limit Up-Limit Down mechanism that will prevent trades in certain stocks from occurring outside of specified price bands.

Trades for individual exchange-listed or National Market System (NMS) stocks will be prohibited from occurring at a set percentage higher or lower than the average security price in the preceding five minutes during certain market hours.

Securities included	Trading hours	Average security price	Price band percentage	Price band percentage during market open/close*
All NMS stocks, excluding rights and warrants (Tier 2)	9:30 a.m. ET – 4:00 p.m. ET	More than \$3.00	10%**	20%
		\$0.75 and up to and including \$3.00	20%	40%
		Less than \$0.75	Lesser of \$0.15 or 75%	\$0.30 or 150% (upper band only)

* Price band percentages will generally be doubled at the market open (9:30 a.m. ET – 9:45 a.m. ET) and at the market close (3:35 p.m. ET – 4:00 p.m. ET) to accommodate more typical trading patterns during those time periods.

** Tier 1 securities (stocks in the S&P 500 Index, Russell 1000 Index and certain ETPs) priced over \$3.00 utilize a 5% price band.

Market Wide Circuit Breaker (MWCB)

A trigger of a Level 1, Level 2 or Level 3 Market Wide Circuit Breaker is treated by the System as a regulatory trading halt on the primary listing market for every security.

MWCB Plan Details

- If a Level 1 Market Decline or a Level 2 Market Decline occurs after 9:30 a.m. and up to and including 3:25 p.m., or in the case of an early scheduled close, 12:25 p.m., the Exchange will halt trading in all stocks for 15 minutes after a Level 1 or Level 2 Market Decline.
- The Exchange will halt trading based on a Level 1 or Level 2 Market Decline only once per trading day. The Exchange will not halt trading if a Level 1 Market Decline or a Level 2 Market Decline occurs after 3:25 p.m., or in the case of an early scheduled close, 12:25 p.m.
- If a Level 3 Market Decline occurs at any time during the trading day, the Exchange will halt trading in all stocks for the remainder of the trading day, the 24X Market Session would not be available and trading would resume for the pre-market session at 4:00 a.m. ET the following regular trading day.
- If a primary listing market halts trading in all stocks, the Exchange will halt trading in all stocks until trading has resumed on the primary listing market or notice has been received from the primary listing market that trading may resume.

Schedule of Fees

The Exchange will provide Members with the notice of all relevant fees, assessments, and charges of the Exchange. Notices may be made available to Members on the Exchange's website or by any other method deemed reasonable by the Exchange. General information on Section 31 fees is available at <https://www.sec.gov/fast-answers/answerssec31htm.html>.

Such fees, assessments, and charges may include membership dues, transaction fees, communication and technology fees, regulatory charges, and other fees and charges as the Exchange may determine. All such dues, fees, and charges shall be equitably allocated among Members, issuers, and other persons using the Exchange's facilities.

24X Market Session

Eligible Order Types and Modifiers:

- **Limit Orders:** An order to buy or sell a stated quantity of a security at a specified price or better. For buy limit orders, the order will be executed only at the limit price or lower, while for sell limit orders, the order will be executed only at the limit price or higher.
- **Reserve Quantity:** A Limit Order with a quantity of the size displayed and with a reserve quantity of the size ("**reserve quantity**") that is not displayed. Both the display quantity and the reserve quantity of an arriving marketable Reserve Order are eligible to trade with resting interest in the 24X Book. The display quantity of a Reserve Order must be entered in round lots. The displayed portion of a Reserve Order will be replenished following any execution. Each time a Reserve Order is replenished from reserve quantity, a new working time is assigned to the replenished quantity of the Reserve Order.
- **Non-Displayed:** Orders are hidden from the marketplace. All incoming order flow can interact with hidden orders until the hidden size is exhausted at the specified price.
- **Minimum Execution Quantity:** Minimum Quantity (Min.Qty.) functionality allows users to request a minimum share amount on each execution. Orders with Minimum Quantity instructions will always be with non-displayed orders and orders with such instructions are not eligible for routing.
- **Post Only:** A Post Only "PO" is an order that is rejected if it is marketable against the NBBO on arrival. A PO Order is eligible to interact solely with interest on the Exchange, will not route, and will cancel if it locks or crosses the NBBO.
- **Book Only:** An order instruction stating that an order will be matched against an order on the 24X Book or posted to the 24X Book but will not route to an away trading center.
- **Intermarket Sweep Orders (ISO):** A Limit Order that does not route and meets the requirements of Rule 600(b)(38) of Regulation NMS.
 - **IOC-Immediate or Cancel** - An ISO designated IOC will be immediately traded with contra-side interest in the 24X Book up to its full size and limit price and the quantity. The balance of the unfilled quantity will be cancelled back to the member.
 - **Day+ ISO** - An ISO designated Day+, if marketable on arrival, will be immediately traded with contra-side interest in the 24X Book up to its full size and limit price. Any untraded quantity of a Day+ ISO will be displayed at its limit price and may lock or cross a protected quotation that was displayed at the time of arrival.
- **STP Modifier:** Any incoming order to buy (sell) designated with an STP modifier will be prevented from trading with a resting order to sell (buy) from the same 24X Exchange member ID. The STP modifier on the incoming order controls the interaction between two orders marked with STP

modifiers. The STP modifier may instruct the System to take one of the following actions:

- Cancel Newest order ("CN")
- Cancel Oldest order ("CO")
- Decrement and Cancel ("DC")
- Cancel Both orders ("CB")
- Cancel Smallest ("CS")

Orders may be submitted in round lots, mixed lots, or odd lots.

Ineligible Order Types and Modifiers:

- Market Orders
- Pegged Orders
- Primary Peg with or without Offsets
- Midpoint Peg

Time-in-Force (TIF) instructions available:

- Extended Hours (Day+): Available for execution in all trading sessions during one 24X Trading Day, starting at 8:00 p.m. on one calendar day and, if not executed, expires by 7:00 p.m. on the next calendar day
- Immediate-Or-Cancel: (IOC).
- Fill-Or-Kill (FOK): An IOC order where the entire size must be filled.
- Good-'til Time ("GTT"). An instruction the User may attach to an order specifying the time of day at which the order expires. Any unexecuted portion of an order with a TIF instruction of GTT will be cancelled at the expiration of the User's specified time, which can be no later than the close of the Post-Market Session.

Appendix I

Order Types and Session Availability

The Exchange accepts three main order types: Market Orders, Limit Orders and Pegged Orders. The availability of these order types across the Exchange's different trading sessions is set out below. Members are also able to apply Modifiers and Time in Force instructions, depending on the order type and the trading session:

Modifiers:

- Intermarket Sweep Orders (**ISO**)
- Reserve Quantity (**Reserve**)
- Non-Displayed
- Minimum Execution Quantity (**MEQ**)
- Post Only
- Book Only
- STP Modifiers (**STP**)

Time in Force:

- RHO
- FOK
- IOC
- Day+
- GTT

Order Type	Pre-Market Session 4:00 a.m. to 9:30 a.m.	Core Market Session 9:30 am to 4:00 pm	Post-Market Session 4:00 pm to 7:00 p.m.	24X Market Session 8:00 p.m. on Sunday to 4:00 a.m. on Monday; 8:00 p.m. on Monday to 4:00 a.m. on Tuesday; 8:00 p.m. on Tuesday to 4:00 a.m. on Wednesday; 8:00 p.m. on Wednesday to 4:00 a.m. on Thursday; and 8:00 p.m. on Thursday to 4:00 a.m. on Friday (as described in full detail in Rule 1.5(c))
Market Order	N/A	<u>Modifiers:</u> Reserve Non-displayed MEQ STP <u>Time in Force:</u> RHO FOK IOC	N/A	N/A

Order Type	Pre-Market Session 4:00 a.m. to 9:30 a.m.	Core Market Session 9:30 am to 4:00 pm	Post-Market Session 4:00 pm to 7:00 p.m.	24X Market Session 8:00 p.m. on Sunday to 4:00 a.m. on Monday; 8:00 p.m. on Monday to 4:00 a.m. on Tuesday; 8:00 p.m. on Tuesday to 4:00 a.m. on Wednesday; 8:00 p.m. on Wednesday to 4:00 a.m. on Thursday; and 8:00 p.m. on Thursday to 4:00 a.m. on Friday (as described in full detail in Rule 1.5(c))
Limit Order	<u>Modifiers:</u> ISO Reserve Non-Displayed MEQ Post Only Book Only STP <u>Time in Force:</u> FOK IOC Day+ GTT	<u>Modifiers:</u> ISO Reserve Non-Displayed MEQ Post Only Book Only STP <u>Time in Force:</u> RHO FOK IOC Day+ GTT	<u>Modifiers:</u> ISO Reserve Non-Displayed MEQ Post Only Book Only STP <u>Time in Force:</u> FOK IOC Day+ GTT	<u>Modifiers:</u> ISO Reserve Non-Displayed MEQ Post Only Book Only STP <u>Time in Force:</u> FOK IOC Day+ GTT
Pegged Order Includes Midpoint Pegs and Primary Pegs with Offsets	<u>Modifiers:</u> Reserve Non-Displayed MEQ Post Only Book Only STP <u>Time in Force:</u> RHO FOK IOC Day+ GTT	<u>Modifiers:</u> Reserve Non-Displayed MEQ Post Only Book Only STP <u>Time in Force:</u> RHO FOK IOC Day+ GTT	<u>Modifiers:</u> Reserve Non-Displayed MEQ Post Only Book Only STP <u>Time in Force:</u> RHO FOK IOC Day+ GTT	N/A